

**Original citation:**

Antonakis, John and Eubanks, Dawn L.. (2017) Looking leadership in the face. *Current Directions in Psychological Science*, 26 (3). pp. 270-275.

**Permanent WRAP URL:**

<http://wrap.warwick.ac.uk/90849>

**Copyright and reuse:**

The Warwick Research Archive Portal (WRAP) makes this work by researchers of the University of Warwick available open access under the following conditions. Copyright © and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable the material made available in WRAP has been checked for eligibility before being made available.

Copies of full items can be used for personal research or study, educational, or not-for-profit purposes without prior permission or charge. Provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

**Publisher's statement:**

Published version: <http://dx.doi.org/10.1177/0963721417705888>

**A note on versions:**

The version presented here may differ from the published version or, version of record, if you wish to cite this item you are advised to consult the publisher's version. Please see the 'permanent WRAP URL' above for details on accessing the published version and note that access may require a subscription.

For more information, please contact the WRAP Team at: [wrap@warwick.ac.uk](mailto:wrap@warwick.ac.uk)

# LOOKING LEADERSHIP IN THE FACE

John Antonakis

Faculty of Business and Economics

University of Lausanne

Dawn L. Eubanks

Warwick Business School

University of Warwick

Accepted version:

*Current Directions in Psychological Science*

Reference: Antonakis, J. & Eubanks, D. L. 2017. Looking leadership in the face. *Current Directions in Psychological Science*, 26(3): 270-275.

Acknowledgements: We thank Saskia Faulk, Athena Faulk-Antonakis, Laurent Lehman, Marianne Schmid Mast, Christopher Y. Olivola, and Alexander Todorov, Christian Zehnder, for helpful suggestions or comments made on previous drafts of this manuscript. Correspondence concerning this article should be addressed to John Antonakis, Faculty of Business and Economics, University of Lausanne, Internet 618, Lausanne, CH-1015 Switzerland. E-mail: [john.antonakis@unil.ch](mailto:john.antonakis@unil.ch)

## ABSTRACT

Given what we know about predictors of leader ability, facial appearance should play a small or very limited role in how observers select leaders; however, research convincingly shows otherwise. In this article, we review which consequential leader outcomes are predicted by facial appearance. We explain why observers are inclined to take heuristic decisions using facial cues, discuss whether facial appearance carries credible information, and identify the conditions that may attenuate “face effects.”

**Keywords:** Leadership, face-ism, facial appearance, effectiveness, emergence.

When judging candidates for a leadership position, selectors need accurate information on the competence and trustworthiness, among other characteristics, of the individual concerned.

Ideally, selectors—such as company board members choosing a CEO, or voters choosing a politician—should use valid cues and weigh all relevant information in their decisions.

Research shows that facial appearance matters considerably for leader selection (Todorov, Mandisodza, Goren, & Hall, 2005). In literally milliseconds, observers use slivers of information to make inferences about the target's character (Willis & Todorov, 2006). The more distant observers are from leaders, or the less tangible information observers have, the more likely they will use *any* information, including looks, to infer about leader's ability or trustworthiness (Antonakis & Jacquart, 2013). Deriving inferences from facial appearances is called “face-ism” (Olivola, Funk, & Todorov, 2014).

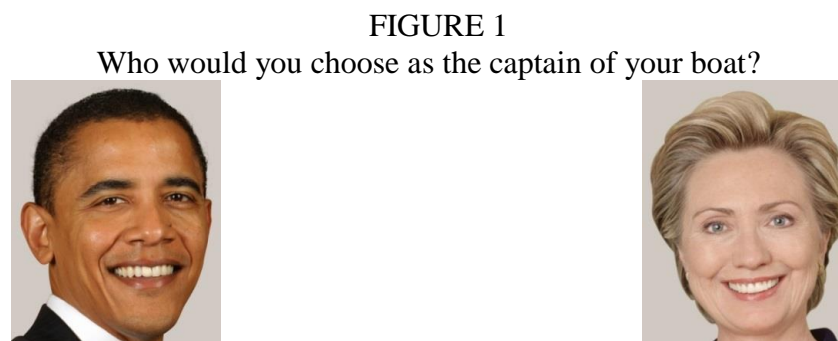
Using facial cues when other information is not available is rational and to an extent adaptive. However, in certain conditions, observers pay inordinate attention to a target's face (Todorov, Olivola, Dotsch, & Mende-Siedlecki, 2015) and may even discount more valid information (Olivola & Todorov, 2010). The situations under which observers use facial appearance and its consequences pose interesting problems for psychology given the ubiquity of this phenomenon (Todorov, et al., 2015).

Our focus is on leadership: We discuss what consequential outcomes facial appearance predicts and why individuals infer characteristics from the face. These issues are interesting to address from a basic research point of view, but are also very important because of their policy implications.

## WHAT DOES FACIAL APPEARANCE PREDICT?

To motivate the themes we discuss, suppose we undertook an experiment with young children who do not know the terms “competence” or “leadership,” but who do understand what a boat

captain does. We ask the children to play a game reenacting the voyage of Odysseus from Troy to Ithaca, thus making salient the captain role. The children then assume that they would undertake the voyage for real; their task is to make a choice between the two individuals depicted in Figure 1 (Antonakis & Dalgas, 2009). Who would they chose?



The person on the left

The person on the right

Figure caption: The above set of photographs were taken from official Senate pictures, cropped, and put on the same background. This is the same set of photographs used by Antonakis and Dalgas (2009) to make predictions for the Democratic party nomination, wherein Swiss children—who were obviously far removed from U.S. political news—favored Barak Obama (left) over Hillary Clinton (right). Data on this, and other election races were gathered between 30th May to 1st June 2008, a few days prior to Obama clinching the nomination.

Experiments such as the one depicted above, were brought to the fore by Alexander Todorov and his colleagues; as far as political contexts are concerned, naïve subjects are typically asked to choose who, between two individuals—usually the winner and runner up of an election race—is the more competent, intelligent, and leaderlike (Todorov, et al., 2005). These experiments, using U.S. congressional elections, showed that naïve subjects reliably picked the winner even if exposed to the faces for 1 second; although real voters do use additional information beyond the target's face, that naïve raters predict their choices suggests voters are anchored on their initial impressions, presumably formed from facial inferences (Todorov, et al., 2005).

To better understand the gist of the Antonakis and Dalgas (2009) experiment, beyond the U.S. nomination race depicted in the figure they also showed pairs of faces (same sex and race)

of 57 French parliamentary run-off elections to 681 children; the probability of a child choosing the winner was 71%! The results were fascinating because child participants chose political candidates in an indistinguishable way from adult participants who rated the targets on competence, intelligence, and leadership ability, and this regarding a poorly-publicized election in another country. Important to note is that nomination or primary races are unlike high-stakes general elections. The latter are more information rich (e.g., elections for the presidency of the U.S.) and other factors may come in to play in leader selection including incumbency, economic performance, and charisma (Jacquart & Antonakis, 2015), suggesting that face effects would play a lesser role (see also Ahler, Citrin, Dougal, & Lenz, 2016).

Much research has undertaken studying face effects in a variety of contexts. Findings generally show that participants, using only facial appearance of targets and rating them on competence, intelligence, leadership, or attractiveness, can well predict the winner across a variety of political contexts (Ahler, et al., 2016; Antonakis & Dalgas, 2009; Lawson, Lenz, Baker, & Myers, 2010; Sussman, Petkova, & Todorov, 2013; Todorov, et al., 2005). Facial appearance (e.g., looking powerful, competent), is also critical for leader success in business settings (Linke, Saribay, & Kleisner, 2016; Rule & Ambady, 2008, 2011; Stoker, Garretsen, & Spreuwiers, 2016). These effects work similarly when rating males and females (see Todorov, et al., 2015), though some difference exist (e.g., judgments of attractiveness have a stronger impact on females, see Berggren, Jordahl, & Poutvaara, 2010).

Facial appearance also influences other affect-oriented outcomes, which are important in how leaders are judged, including trustworthiness (Rezlescu, Duchaine, Olivola, & Chater, 2012). Important to note too is that in political settings, experimental designs, which randomize participants to receive realistic ballot materials with or without candidate photos show that appearance plays a *causal role* in affecting voting outcomes (Ahler, et al., 2016). Also,

computation models using face morphing have isolated features that causally impact inferences of dominance, extraversion, or competence (Olivola, Funk, et al., 2014). Overall, the literature clearly shows that facial appearance provides an advantage to leaders, which translates into consequential success (e.g., leader emergence or other outcomes).

### WHY DO FACE EFFECTS EXIST?

Is there is something in one's face that signals certain underlying abilities and do individuals learn to identify facial configurations that predict outcomes? That children having little experience evaluating leaders do so in similar ways to adults, suggests that it is not experiential learning driving the result but something else (Antonakis & Dalgas, 2009). In addition, inferences are done in milliseconds (Willis & Todorov, 2006), judgments generalize across cultures (Berggren, et al., 2010)—though with some nuances regarding attributes used (Rule et al., 2010)—there is usually strong consensus across raters regarding inferences made (Penton-Voak, Pound, Little, & Perrett, 2006), and individual decisions correlate with particular brain regions (Rule et al., 2011; Todorov, Baron, & Oosterhof, 2008). These results suggest we may be hardwired to infer information from faces.

The above findings suggest that inferences based on faces are automatic and that some evolutionary mechanism, perhaps adapted for a purpose other than leader selection (e.g., sexual selection, detecting a threatening individual), explains some of the results. We know that humans and animals hold information in schematic form and can quickly act on external stimuli using rules-based probabilistic reasoning (Cosmides & Tooby, 1996). Heuristic decision-making of this sort must have provided certain evolutionary advantages in decision making. Science is not at the point of answering definitively how evolutionary forces shaped our decision-making for leader selection. However, facial appearance does carry a “kernel of truth” (Rhodes, Chan, Zebrowitz, & Simmons, 2003). Facial symmetry, which is thought to indicate general fitness correlates albeit

weakly with intelligence (Banks, Batchelor, & McDaniel, 2010) and with extraversion (Pound, Penton-Voak, & Brown, 2007); these two traits that are important determinants of leader emergence and effectiveness (Antonakis & Jacquart, 2013).

If evolved cues from the face are honest and provide some benefit to the signaler and receiver, then individuals should be able to reliably detect them. Perceptions of physical strength do correlate quite strongly with actual strength (Sell et al., 2009). Perceived and self-reported extraversion correlate modestly (Penton-Voak, et al., 2006). The correlations between perceived and actual intelligence are weak overall—however, judgment accuracy substantially improves for targets having a less attractive and asymmetrical appearance. That is, for individuals who appear more attractiveness and symmetrical, it is not possible to identify variations in intelligence (i.e., once a critical threshold of attractiveness is traversed there is not much variation in fitness to detect); this research suggests a possible evolved mechanism for detecting “bad” genes (Zebrowitz & Rhodes, 2004).

There are also good arguments suggesting that evolutionary adaptation for leader selection is shaped by situational requirements (Von Rueden & Van Vugt, 2015)—individuals can accurately identify classes of leaders (e.g., military, sports, business) from facial appearance alone, indicating some sorting as a function of facial cues (Olivola, Eubanks, & Lovelace, 2014). Also, who is judged to be an appropriate leader varies as a function of context including various threats to the collective (e.g., see Bøggild & Laustsen, 2016; Spisak, Grabo, Arvey, & van Vugt, 2014).

#### IS THE FACE A VALID PREDICTOR OF LEADER EFFECTIVENESS?

Although facial appearance matters for leader success, it is important to qualify what success means: Typically, in leadership studies it can mean (a) leader emergence or other outcomes like likeability or trustworthiness or (b) objective ratings of leader effectiveness (Antonakis &



Jacquart, 2013). Consider leader emergence in political settings: We know that naïve raters are able to predict choices made by voters (i.e., leader emergence). However, this result does not establish that the most competent and effective leaders were selected. It just means that naïve individuals with little information on leaders chose just like voters did who had more information on the leaders. Additionally, if the most competent had been selected, all leaders would be highly intelligent, which is not the case, at least in political settings (Antonakis & Jacquart, 2013).

Regarding business settings, ratings of leader faces correlate with firm-level outcomes (Rule & Ambady, 2008; Wong, Ormiston, & Haselhuhn, 2011); however, these results may have several explanations because leader faces are not exogenous (i.e., leaders were not randomized to companies). It is possible that better performing companies chose leaders on their appearance. Thus, establishing a *causal* and not merely *correlational* relation between perceived facial competence and objective outcomes of effectiveness requires the application of robust econometric methods to eliminate confounding variables (Antonakis, Bendahan, Jacquart, & Lalive, 2010).

Recent studies—which have been careful to disentangle emergence from effectiveness and minimized validity threats to causality—demonstrate that appearance plays a significant role in being selected as a leader (Stoker, et al., 2016) or being paid a higher salary (Graham, Harvey, & Puri, 2016), again showing that emergence can depend on facial appearance. However, facial appearance does not seem to play a causal role in predicting actual firm performance (Graham, et al., 2016; Stoker, et al., 2016).

### IS FACE-ISM ADAPTIVE?

Evolution usually “gets it right” regarding innate decision-making mechanisms. Perhaps some of the evolved mechanisms we have were useful for our ancestral environments, whether for sexual selection or even for leader selection in some situations (e.g., where phenotypic signals like

strength, dominance, or other factors mattered for leadership). Yet, it seems too that our genetic baggage may not be fully compatible with our current social and technological demands—what has been called the “mismatch hypothesis” by evolutionary psychologists (Van Vugt, Hogan, & Kaiser, 2008). That the mismatch effect occurs is likely given we know that observers have a propensity to discount valid cues of a target when exposed to a target’s face (Olivola & Todorov, 2010).

Face-sim, however, might still have functional value for collectives. For instance, certain features of a target’s face (e.g., how powerful, dominant, or extraverted the target appears) may increase the likelihood that the target emerges as a leader. These features may also provide positive externalities for the leader or the collective via two other mechanisms, stemming from what may be a self-fulfilling prophecy (Todorov, et al., 2015): (a) observers of the leader (e.g., negotiating partner) might treat the leader as if these features are reliable proxies of the leader’s true underlying abilities, and may be more deferential to the leader or trust the leader more (e.g., see Rezlescu, et al., 2012) and (b) having a certain characteristic may make the individual exhibit a behavior associated with the trait or become more confident because of how the individual is treated by others (e.g., see Judge & Cable, 2004, for the case of height).

Evidence shows that facial appearance (e.g., looking trustworthy) still plays a significant role even in situations where more valid information is available (Olivola, Sussman, Tsetsos, Kang, & Todorov, 2012; Rezlescu, et al., 2012) suggesting that face-ism is not fully adaptive. Interestingly, observers who are more knowledgeable and have more relevant information (Ahler, et al., 2016), or who watch less television (Lenz & Lawson, 2011) are less susceptible to face effects. Also, although observers might discount relevant information when available, they do still pay attention to other cues, particularly body language, when inferring emotions, which may

have been adaptive for judging threat from a distance (Martinez, Falvello, Aviezer, & Todorov, 2016).

Finally, although the focus of face-ism is usually on observers, targets can also affect how they are seen. For instance, by strongly and consistently signaling competence and trustworthiness via verbal and nonverbal behavior indicative of charismatic leaders, targets can reduce or go beyond the effects of their appearance to affect leader outcomes (Antonakis, Fenley, & Liechti, 2011). This area of research is still young, and more research is needed to understand how facial stereotypes can be counteracted by actions taken by the target.

### CONCLUSION

Facial cues may correlate with outcomes not only because they may cause them but because of how individuals with certain facial features are treated and expected to act (Todorov, et al., 2015). There is still much to learn about the nature of face-ism, which elements are adaptive, and how policies can be designed to counteract possible negative effects. We also need to learn more about its moderating conditions and mediating mechanisms.

Still, as we have shown in our review, there are sufficient findings in the literature to know about face-ism's consequences and that valid cues about a target's characteristics might be dominated by cues stemming from facial appearance. Thus, raising awareness in educators, policy makers, and practitioners is imperative. Moreover, some simple measures could be taken to improve validity in evaluations by training evaluators to appropriately ponder and aggregate information cues that are valid indicators of a leader's character and competence, and hence future performance. Other valuable avenues include minimizing exposure to face cues in evaluation processes when possible.

As presciently written by Shakespeare in *Macbeth*: "There's no art to find the mind's construction in the face<sup>1</sup>."

## RECOMMENDED READINGS

1. A comprehensive review, covering leadership and other domains: Todorov, A., Olivola, C. Y., Dotsch, R., & Mende-Siedlecki, P. (2015). Social Attributions from Faces: Determinants, Consequences, Accuracy, and Functional Significance. *Annual Review of Psychology*, 66, 519-545.
2. One of the first major experiments undertaken that demonstrates face effects in political leadership: Todorov, A., Mandisodza, A. N., Goren, A., & Hall, C. C. (2005). Inferences of competence from faces predict election outcomes. *Science*, 308(5728), 1623-1626.
3. A short and simple read showing children can predict election outcomes using only facial appearance: Antonakis, J., & Dalgas, O. (2009). Predicting Elections: Child's Play! *Science*, 323(5918), 1183.
4. Shows that a competent look drives CEO salary but not performance: Graham, J. R., Harvey, C. R., & Puri, M. (2016). A Corporate Beauty Contest. *Management Science*, <http://dx.doi.org/10.1287/mnsc.2016.2484>.
5. A detailed handbook covering various research topics on face perception: Calder, A. J., Rhodes, G., Johnson, M. H., & Haxby, J. V. (2011). *The Oxford handbook of face perception*. Oxford: Oxford University Press.

## ENDNOTES

<sup>1</sup>This means that it is not possible to read one's character from one's looks.

## REFERENCES

- Ahler, D. J., Citrin, J., Dougal, M. C., & Lenz, G. S. (2016). Face Value? Experimental Evidence that Candidate Appearance Influences Electoral Choice. *Political Behavior*, 1-26.
- Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A review and recommendations. *The Leadership Quarterly*, 21, 1086-1120.
- Antonakis, J., & Dalgas, O. (2009). Predicting Elections: Child's Play! *Science*, 323(5918), 1183.
- Antonakis, J., Fenley, M., & Liechti, S. (2011). Can Charisma Be Taught? Tests of Two Interventions. *The Academy of Management Learning and Education*, 10(3), 374-396.
- Antonakis, J., & Jacquart, P. (2013). The far side of leadership: Rather Difficult to Face. In M. C. Bligh & R. E. Riggio (Eds.), *When Near is Far and Far is Near: Distance in Leader-Follower Relationships* (pp. 155-187). New York: Routledge.
- Banks, G. C., Batchelor, J. H., & McDaniel, M. A. (2010). Smarter people are (a bit) more symmetrical: A meta-analysis of the relationship between intelligence and fluctuating asymmetry. *Intelligence*, 38(4), 393-401.
- Berggren, N., Jordahl, H., & Poutvaara, P. (2010). The looks of a winner: Beauty and electoral success. *Journal of Public Economics*, 94(1-2), 8-15.
- Bøggild, T., & Laustsen, L. (2016). An intra-group perspective on leader preferences: Different risks of exploitation shape preferences for leader facial dominance. *The Leadership Quarterly*, 27(6), 820-837.
- Cosmides, L., & Tooby, J. (1996). Are humans good intuitive statisticians after all? Rethinking some conclusions from the literature on judgment under uncertainty. *Cognition*, 58(1), 1-73.
- Graham, J. R., Harvey, C. R., & Puri, M. (2016). A Corporate Beauty Contest. *Management Science*, <http://dx.doi.org/10.1287/mnsc.2016.2484>.
- Jacquart, P., & Antonakis, J. (2015). When does charisma matter for top-level leaders? Effect of attributional ambiguity. *Academy of Management Journal*, 58, 1051-1074.
- Judge, T. A., & Cable, D. M. (2004). The effect of physical height on workplace success and income: Preliminary test of a theoretical model. *Journal of Applied Psychology*, 89(3), 428-441.
- Lawson, C., Lenz, G. S., Baker, A., & Myers, M. (2010). Looking like a winner: Candidate appearance and electoral success in new democracies. *World Politics*, 62(4), 561-593.
- Lenz, G. S., & Lawson, C. (2011). Looking the Part: Television Leads Less Informed Citizens to Vote Based on Candidates' Appearance. *American Journal of Political Science*, 55(3), 574-589.
- Linke, L., Saribay, S. A., & Kleisner, K. (2016). Perceived trustworthiness is associated with position in a corporate hierarchy. *Personality and Individual Differences*, 99, 22-27.
- Martinez, L., Falvello, V. B., Aviezer, H., & Todorov, A. (2016). Contributions of facial expressions and body language to the rapid perception of dynamic emotions. *Cognition and Emotion*, 30(5), 939-952.
- Olivola, C. Y., Eubanks, D. L., & Lovelace, J. B. (2014). The many (distinctive) faces of leadership: Inferring leadership domain from facial appearance. *The Leadership Quarterly*, 25(5), 817-834.
- Olivola, C. Y., Funk, F., & Todorov, A. (2014). Social attributions from faces bias human choices. *Trends in Cognitive Sciences*, 18(11), 566-570.

- Olivola, C. Y., Sussman, A. B., Tsetsos, K., Kang, O. E., & Todorov, A. (2012). Republicans prefer Republican-looking leaders: Political facial stereotypes predict candidate electoral success among right-leaning voters. *Social Psychological and Personality Science*, 3(5), 605-613.
- Olivola, C. Y., & Todorov, A. (2010). Fooled by first impressions? Reexamining the diagnostic value of appearance-based inferences. *Journal of Experimental Social Psychology*, 46(2), 315-324.
- Penton-Voak, I. S., Pound, N., Little, A. C., & Perrett, D. I. (2006). Personality Judgments from Natural and Composite Facial Images: More Evidence For A "Kernel Of Truth" In Social Perception. *Social Cognition*, 24(5), 607-640.
- Pound, N., Penton-Voak, I. S., & Brown, W. M. (2007). Facial symmetry is positively associated with self-reported extraversion. *Personality and Individual Differences*, 43(6), 1572-1582.
- Rezlescu, C., Duchaine, B., Olivola, C. Y., & Chater, N. (2012). Unfakeable Facial Configurations Affect Strategic Choices in Trust Games with or without Information about Past Behavior. *PLoS ONE*, 7(3).
- Rhodes, G., Chan, J., Zebrowitz, L. A., & Simmons, L. W. (2003). Does sexual dimorphism in human faces signal health? *Proceedings of the Royal Society B-Biological Sciences*, 270, S93-S95.
- Rule, N. O., & Ambady, N. (2008). The face of success - Inferences from chief executive officers' appearance predict company profits. *Psychological Science*, 19(2), 109-111.
- Rule, N. O., & Ambady, N. (2011). Face and fortune: Inferences of personality from Managing Partners' faces predict their law firms' financial success. *Leadership Quarterly*, 22(4), 690-696.
- Rule, N. O., Ambady, N., Adams, R. B., Ozono, H., Nakashima, S., Yoshikawa, S., et al. (2010). Polling the Face: Prediction and Consensus Across Cultures. *Journal of Personality and Social Psychology*, 98(1), 1-15.
- Rule, N. O., Moran, J. M., Freeman, J. B., Whitfield-Gabrieli, S., Gabrieli, J. D. E., & Ambady, N. (2011). Face value: Amygdala response reflects the validity of first impressions. *Neuroimage*, 54(1), 734-741.
- Sell, A., Cosmides, L., Tooby, J., Sznycer, D., von Rueden, C., & Gurven, M. (2009). Human adaptations for the visual assessment of strength and fighting ability from the body and face. *Proceedings of the Royal Society B: Biological Sciences*, 276(1656), 575-584.
- Spisak, B. R., Grabo, A. E., Arvey, R. D., & van Vugt, M. (2014). The age of exploration and exploitation: Younger-looking leaders endorsed for change and older-looking leaders endorsed for stability. *The Leadership Quarterly*, 25(5), 805-816.
- Stoker, J. I., Garretsen, H., & Spreuwiers, L. J. (2016). The Facial Appearance of CEOs: Faces Signal Selection but Not Performance. *PLoS ONE*, 11(7).
- Sussman, A. B., Petkova, K., & Todorov, A. (2013). Competence ratings in US predict presidential election outcomes in Bulgaria. *Journal of Experimental Social Psychology*, 49(4), 771-775.
- Todorov, A., Baron, S. G., & Oosterhof, N. N. (2008). Evaluating face trustworthiness: a model based approach. *Social Cognitive and Affective Neuroscience*, 3(2), 119-127.
- Todorov, A., Mandisodza, A. N., Goren, A., & Hall, C. C. (2005). Inferences of competence from faces predict election outcomes. *Science*, 308(5728), 1623-1626.
- Todorov, A., Olivola, C. Y., Dotsch, R., & Mende-Siedlecki, P. (2015). Social Attributions from Faces: Determinants, Consequences, Accuracy, and Functional Significance. *Annual Review of Psychology*, 66, 519-545.

- Van Vugt, M., Hogan, R., & Kaiser, R. B. (2008). Leadership, followership, and evolution - Some lessons from the past. *American Psychologist*, 63(3), 182-196.
- Von Rueden, C., & Van Vugt, M. (2015). Leadership in small-scale societies: Some implications for theory, research, and practice. *The Leadership Quarterly*, 26(6), 978-990.
- Willis, J., & Todorov, A. (2006). First impressions: Making up your mind after a 100-ms exposure to a face. *Psychological Science*, 17(7), 592-598.
- Wong, E. M., Ormiston, M. E., & Haselhuhn, M. P. (2011). A Face Only an Investor Could Love: CEOs' Facial Structure Predicts Their Firms' Financial Performance. *Psychological Science*, 22(12), 1478-1483.
- Zebrowitz, L. A., & Rhodes, G. (2004). Sensitivity to “Bad Genes” and the Anomalous Face Overgeneralization Effect: Cue Validity, Cue Utilization, and Accuracy in Judging Intelligence and Health. *Journal of Nonverbal Behavior*, 28(3), 167-185.